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REVIEWS AND ABSTRACTS OF LITERATURE

How We Think. Part I., The Problem of Training Thought. Part II., Logical Considerations. Part III., The Training of Thought. JOHN DEWEY. New York: D. C. Heath & Co. 1910. Pp. vi + 224.

On page 72 Mr. Dewey analyzes a complete act of thought into five steps, which may be condensed into three, thus: (1) a felt difficulty defined, (2) suggested solutions developed by reasoning, (3) experimental application of the suggestions. His book in its structure is an example—so far as printed matter can be—of one complete act of thought as so analyzed.

Part I. is the presentation and definition of the problem of training thought.

Part II. is the presentation and development of ideas which bear upon the problem.

Part III. indicates the concrete application of the ideas there developed to the training of thought.

Thus the feature of this book, as an exposition of the new logic, is, that it *is* what it declares true thought to be. In that respect it is unique. And that is the respect in which its author is eminent among those who are called pragmatists. Therefore I venture to say that this little "educational" book contains the heart of his philosophy. It contains it, moreover, in a form and language comprehensible to minds uncorrupted by philosophic scholarship.

For those to whom the observation and classification of thought is an end in itself, the most interesting parts of the book will be—

First, in Part I.: (*a*) The emphasis upon the specific nature of thought. "Thinking is not a case of spontaneous combustion; it does not occur just 'on general principles.' There is something specific which occasions and evokes it" (p. 12).

(*b*) The discussion of the relation of the psychological and the logical (Ch. 5). I quote a characteristic passage: "Logical, however, is used in a third sense which is at once more vital and more practical; to denote, namely, the systematic care, negative and positive, taken to safeguard reflection so that it may yield the best results under the given conditions. . . . No argument is needed to point out that the educator is concerned with the logical in its practical and vital sense. Argument is perhaps needed to show that the *intellectual* (as distinct from the *moral*) *end of education is entirely and only the logical in this sense; namely, the formation of careful, alert, and thorough habits of thinking.*"

(*c*) A combination of (*a*) and (*b*) in these sentences: "The disciplined, or logically trained, mind . . . is the mind able to judge how far each of these steps needs to be carried in any particular situation. No cast-iron rules can be laid down. Each case has to be dealt with as it arises, on the basis of its importance and of the context in which it occurs. To take too much pains in one case is as foolish—as illogical—as to take too little in another" (p. 78). These quotations may be merely innocent pieces of advice to nervous teachers, and, as the publisher fears, beneath our philosophic notice. But I doubt if they are so innocent as they appear.

Second, all of Part II., in which the author's original contribution to logical theory is more clearly set forth than anywhere else. I mention, somewhat at random but yet with reference to the special interests of the logician, four features of this part.

(*a*) The order of the chapters. Induction is the first thing mentioned. And with that we know that we are set free from the Holy Writ. Our logic is no longer to be a set of rules for a debating society, but an effort to understand the technique of sagacity and science. Surely that technique will not be generally understood until it is viewed and described as beginning with facts. But in the same sentence with induction, follows deduction; and we are introduced at the start to the "*double movement of reflection,*" "back and forth between facts and meanings." I had the feeling that I rarely get from a logic book that we are here dealing with something that really happens. And the reflection recurred to my mind that this logic believes in itself. It tells you that thought starts with facts, and it starts with a fact.

After induction and deduction, *judgment,* which is a name for the act of explicit discrimination within that back-and-forth process, and for the conclusion of it—the final determination, that is, of the meaning of the facts given, which may abide in memory as a principle for future determination.

After judgment, *conception,* which is the highest and latest achievement of thought—the fixation of meanings themselves in *terms,* so that discrimination in the back-and-forth process may become still more explicit. Meanings become facts.

That is what has made all the trouble. To philosophers as such, meanings are the interesting facts, and that is why logic has been handed down to us back-end-foremost. It has been a science not of human thought, but of philosophic thought; and not of philosophic thought as it actually is, but as philosophers like to think it is. Philosophers do not acknowledge that *their* meanings, which they start with, are facts; they think they are ideas. And so they describe thought as the interrelating of ideas, with a short tail-piece or addendum granting that there is a kind of ignoble thought called induction which has doubtful relations with matters of fact. And it will always be difficult for philosophers to acknowledge that their meanings are facts, and their philosophies back-and-forth movements of thought from those facts to the ideas they suggest, because such acknowledgment requires the humility of a Christian and the courage of a sceptic.

(*b*) In each chapter we deal with the same process: inference, judgment, conception—names somewhat loosely and variously used in English for different aspects or parts of the back-and-forth movement of thought. Thus not only is the order of the parts of the old logic reversed, but the parts are merged together.

It is interesting that a theory which emphasizes the specific nature of every thought process, and a philosophy which absolutely capitulates to variety, should have for its most characteristic contribution to future books a new unification, a resolution of various principles of explanation into one. But the paradox is only apparent, I believe, so long as that one is held—as it is here—to be only a higher generalization, based upon observation, and open to include whatever old distinctions are sustained or new ones discovered in the facts.

(*c*) The definition of an idea, as " a meaning that is tentatively entertained, formed, and used with reference to its fitness to decide a perplexing situation; a meaning used as a tool of judgment." To that let me add this quotation: " Ideas are not then genuine ideas unless they are tools in a reflective examination which tends to solve a problem. Suppose it is a question of having the pupil grasp *the idea* of the sphericity of the earth. This is different from teaching him its sphericity *as a fact.* He may be shown (or reminded of) a ball or a globe, and be told that the earth is round like those things; he may then be made to repeat that statement day after day till the shape of the earth and the shape of the ball are welded together in his mind. But he has not thereby acquired any idea of the earth's sphericity; at most, he has had a certain image of a sphere and has finally managed to image the earth after the analogy of his ball image. To grasp sphericity as an idea, the pupil must first have realized certain perplexities or confusing features in observed facts and have had the idea of spherical shape suggested to him as a possible way of accounting for the phenomena in question. Only by use as a method of interpreting data so as to give them fuller meaning does sphericity become a genuine idea. There may be a vivid image and no idea; or there may be a fleeting, obscure image and yet an idea, if that image performs the function of instigating and directing the observation and relation of facts." The importance of this paragraph in logical method is as great as its importance in educational method. It makes psychology, or a consideration of mental *processes,* the basis of both these normative sciences.

(*d*) A final feature of this part—one that seems to need emphasis in this JOURNAL—is the discussion of the " theoretical, or strictly intellectual." " The abstract thinker (the man of pure science, as he is sometimes called) deliberately abstracts from application in life; that is, he leaves practical uses out of account. This, however, is a merely negative statement. What remains when connections with use and application are excluded? *Evidently only what has to do with knowing considered as an end in itself.*" It ought to surprise some of the critics of this kind of logic to find that it allows that man of pure science to exist. It not only allows him to exist, but encourages him. " Interest in knowledge for the sake of knowledge, in thinking for the sake of the full play of thought, is necessary then to the *emancipation* of practical life—to make it rich and progressive." And it even goes so far as to encourage us to emulate with moderation his example. " Every human being has both capabilities, and every individual will be more effective and happier if both powers are developed in easy and close interaction with each other."

As to the question what knowledge for the sake of knowledge *is,* and how distinguished from error—that is not explicitly answered. But perhaps we can frame an answer out of two statements. On page 138, speaking of thinking when it is employed merely as a means to more thinking, the author says: "To a theorist an idea is adequate and self-contained just because it engages and rewards thought." On page 142, speaking of an example of "theoretical" thinking, he says: "No overcoming of physical obstacles, no adjustment of external means to ends, is at stake. Curiosity, intellectual curiosity, is challenged by a seemingly anomalous occurrence; and thinking tries simply to account for an apparent exception in terms of recognized principles."

The answer to the question what "true thinking" is, when it is an end in itself, that I derive from those quotations and my own reflection upon the point of view of the book, is as follows:

True thinking is an inventory of actual facts for some reason attractive, facts as near bare of meaning as the naming of them allows; or it is the formulation of the relation of deliberately observed facts to established meanings—just for the fun of seeing how they fit; or it is the discovery of relations between established meanings. All those are isolated parts of the whole process of practical thinking. To them we must add that practical process itself when its specific predicament is a conflict of the intellectual taste of the thinker with his conceptual environment, and its outcome a reconciliation which has its truth in the satisfaction it gives him. If we ever found these four types pure of practical intention, and distinct from each other, we might get the pleasure of the first type by naming the first three *pure science—descriptive, explanatory,* and *mathematical-philosophic*—and the fourth, *philosophy proper.*

In Part III. we return, with wisdom, to the classroom, where the problem how to train thought arose. But the publishers will hardly expect us, as teachers of philosophy, to descend into these concrete applications of the theory.

To the book as a whole I have intended to give the highest praise in saying that it believes in itself. I wish to add, however, the observation that throughout my reading of it I felt every now and then, when I came to a word like *bridge,* or *relation,* or *connection,* or *organization, organized situation, coherence,* etc., that I was touching bottom so far as this book is concerned. I was harassed with the question, What is the difference between an organized and an unorganized situation? I think the book would be more clear, to those to whom it was especially addressed as well as to us, if that point were explicitly dealt with.

Perhaps that would only start us off, however, upon another of those "spiral movements of knowledge," to which justice is done, for the first time so far as I know, upon page 120, leading us astray among still other intellectual problems. There are plenty of loose ends in this logic—one of the most tantalizing to me being the question what a "meaning" *is,* when you get it away all by itself. The chapter on meaning, as indeed each of those theoretical chapters, wears very clearly the marks of an origination and not a concluding codification. It wears also the marks of origination in a mind loyal to things as they are. Its thesis does not put it in fear of the facts. It is too full of specificness and free pieces of wisdom to satisfy a regular scholar. And in this respect again it obeys its own moral, a moral which has little academic backing besides that of the author, but which I am by a happy chance able to reinforce with the authority of the great Christy Mathewson of the National League, speaking upon the all-important subject of "inside baseball." "Those who are too scientific," he says, "stick to the rules when the rules are no good—that is worse than no rules."

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Theories of Knowledge. LESLIE J. WALKER. London: Longmans, Green, & Co. 1910. Pp. xxxix + 696.

The problem of knowledge is approached by Mr. Walker from three different angles, which are indicated by the titles of the three main divisions of his book, viz.: "The Psychological Analysis of Cognition," "The Metaphysical Conditions of Knowledge," and "The Epistemological Value of Cognition." Under each of these headings he presents an extended discussion of absolutism, pragmatism, and realism, the purpose being to show that of these three realism alone offers a tenable view. Realism, as he maintains, furnishes a "higher synthesis" which, by means of pertinent distinctions, reconciles antitheses and conserves what is true and significant in the other theories.

The realism which the author professes is asserted to be the realism of Aristotle and Thomas Aquinas. While he brings to his task a wide acquaintance with the literature of his subject and a commendable spirit of fairness, it is also evident that he is under the influence of a dualistic bias which, to all appearances, has not been subjected to any serious analysis and criticism. The subject-object relation, as he contends, is present, as an experienced element, in all our sense-perceptions. Perception ordinarily presents us with things, although, on occasion, the object of perception may be a sensation. "Sometimes we merely 'get a taste,' a *sensation* of bitterness or sweetness localized loosely in the mouth, or we feel hot from the effects of violent exercise or cold on account of a chill" (p. 49). Again, "Sensation may be perceived and located in the tips of the fingers, if we attend to *them* and not to the object touched. Even color may appear as a sensation when the eyes are almost closed and all variations in tone, tint, and outline are, as far as possible, eliminated" (p. 50). Barring these rather exceptional cases, however, it may be said that, while sensations are always the means by which we perceive (*id quo percipitur*), they are never the object of perception (*id quod percipitur*). The author frankly avows his adherence to what is commonly known as copyism. "Sensation is an effect produced in a sentient organism by an objective cause which it resembles; and that resemblance is not destroyed by the cooperation of the organism in the production of the effect" (p. 389).

The contention that sense-perception presents things and not conscious states may not seem particularly compatible with the view that